CLAIMS

1. An optical functional layer comprising a fluoroaliphatic group-containing copolymer, the fluoroaliphatic group-containing copolymer having a polymerization unit derived from a fluoroaliphatic group-containing monomer in a content of 10 weight% or more, and being localized on a surface of the optical functional layer.

2. An optical functional film produced by coating an upper layer on the functional layer according to claim 1 in which the fluoroaliphatic group-containing copolymer is localized on the surface.

3. The optical functional film according to claim 2, wherein the fluoroaliphatic group-containing copolymer is a copolymer having on a side chain thereof at least one of a perfluoroalkyl group including 4 or more carbon atoms and fluoroalkyl group having a CF_2H- group including 4 or more carbon atoms.

4. An optical functional film comprising a transparent support having at least two adjacent functional layers on the support, wherein out of multiple adjacent functional layers, a fluoroaliphatic group-

containing copolymer having a polymerization unit derived from fluoroaliphatic group-containing monomer in a content of 10 weight% or more is contained in a furthermost layer from the support in a larger amount than in a layer closer to the support.

5. The optical functional film according to claim 4, wherein the multiple adjacent functional layers contain a cured composition of at least one of an ionizing radiation-curable resin and a thermosetting resin.

6. An antireflection film, which is the optical functional film according to claim 4,

wherein out of the at least two functional layers, the furthermost layer from the support is a low refractive index layer containing a cured composition of a crosslinking fluorine-containing polymer different from the fluoroaliphatic group-containing copolymer.

7. The antireflection film according to claim 6, wherein the functional layer closer to the support is any one of a hard coat layer, an antiglare layer, an light-diffusing layer, and a high refractive index layer.

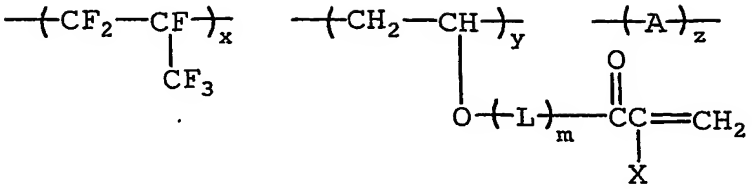
8. The antireflection film according to claim 6,

wherein the low refractive index layer contains at least one kind of a silica fine particle having an average particle size corresponding to 30 to 150% of a thickness of the low refractive index layer.

9. The antireflection film according to claim 6, wherein at least one of the silica fine particle contained in the low refractive index layer is a hollow silica fine particle having a refractive index of 1.17 to 1.40.

10. The antireflection film according to claim 6, wherein the fluorine-containing polymer is a copolymer with a main chain comprising only carbon atoms, and the copolymer containing on a side chain thereof a polymerization unit derived from a fluorine-containing vinyl monomer and a polymerization unit having a acryloyl group.

11. The antireflection film according to claim 10, wherein the copolymer with a main chain comprising only carbon atoms is represented by the following formula 1:



wherein L represents a linking group having from 1 to 10 carbon atoms, m represents 0 or 1, X represents a hydrogen atom or a methyl group, A represents an arbitrary vinyl monomer polymerization unit and may comprise a single component or multiple components, and x, y and z represent mol% of respective constituent components and each represents a value satisfying $30 \leq x \leq 60$, $5 \leq y \leq 70$ and $0 \leq z \leq 65$.

12. The antireflection film according to claim 6, wherein the layer closer to the support is a high refractive index layer and the high refractive index layer is a constituent layer with a refractive index of 1.55 to 2.40, the refractive index layer comprising an inorganic fine particle which contains a titanium dioxide and at least one element selected from a cobalt, an aluminum and a zirconium.

13. A method for producing the optical functional film according to claim 4, the method comprising:

forming a first functional layer, on a surface of which a fluoroaliphatic group-containing copolymer is

localized, on a transparent support; and

coating and then curing a second functional layer on the first functional layer.

14. The method according to claim 13, wherein a coating solution for forming the first functional layer containing the fluoroaliphatic group-containing copolymer has a surface tension, and the surface tension decreases by 1 mN/m or more by addition of the copolymer.

15. The method according to claim 13, wherein a solvent of coating solutions for forming the two functional layers is one of a ketone, an aromatic hydrocarbon, and an ester.

16. The method according to claim 15, wherein a solvent of a coating solution for forming the second functional layer is a ketone.

17. The method according to claim 16, wherein a solvent of a coating solution for forming the first functional layer is different from the solvent of the coating solution for forming the second functional layer.

18. A method for producing an optical functional

film, comprising at least a first functional layer and a second functional layer, which are adjacently formed in this order on a transparent support,

wherein when the first functional layer is formed and then a solvent of a coating solution for forming the second functional layer is coated on the first functional layer, a surface free energy of the first functional layer changes by 1 mN/m or more.

19. A method for producing an optical functional film, comprising at least a first functional layer and a second functional layer, which are adjacently formed in this order on a transparent support,

wherein a coating composition for forming the first functional layer contains a fluoroaliphatic group-containing copolymer which has a polymerization unit derived from a fluoroaliphatic group-containing monomer in a content of 10 weight% or more, the fluoroaliphatic group-containing copolymer is localized on a surface of the first functional layer when the coating composition for forming the first functional layer is coated, and the fluoroaliphatic group-containing copolymer dissolves out into a coating composition for forming the second functional layer when the second functional layer is coated.

20. A polarizing plate comprising a polarizer and two protective sheets therefor,

wherein one protective sheet is one of the optical functional film according to any one of claims 1 to 5, the antireflection film according to claim 6 to 12, and the optical functional film produced by the production method according to claims 13 to 19.

21. An image display device using one of the optical functional film according to any one of claims 1 to 5, the antireflection film according to claim 6 to 12, and the optical functional film produced by the production method according to claims 13 to 18, for an outermost surface of the display.

22. An image display device using the polarizing plate according to claim 20.